Journal of the Alabama Academy of Science, Vol. 50, No. 4, October, 1979.

INDEX

Absolute value and inequalities 143
Acardius acephalus human fetus, an 62
Addison, Mark K. 170
Adolescent hypertension, a longitudinal examination of factors related to 168
Adrian, John L. 152
Agricultural borrower characteristics, objective credit scoring--an analysis of 149
Agricultural impact of general development programs, an input model for assaying 153
Alabama coals, some chemical variations with rank for certain 129
Alabama red-bellied turtle, *Pseudemys alabamensis*, nesting habits of the 113
Alford, W. L. 140
Algae from northwest Alabama, some interesting 107
Allen, Laura H. 141, 142
Ammonium sulfate and urea on the growth of five species of algae isolated from lowland rice cultures, effects of 106
Amorphous silicon, electrical properties of 142
Amphetamine and caffeine on fluid volume intake in rats exhibiting schedule-induced polydipsia, the effects of . . . 170
Analysis of urban growth: the case of Tuscaloosa, Alabama, 1938-1978, the use of sequential aerial photography in the 139
Andreoli, Kathleen G. 165
Anthropology and the new archaeology 176
Anthropology in West Bengal India, applied 177
Aramburu, Juan C. 143
Architectural zoning, a small city's experience with 138
Armadillidium vulgare (Latreille), ^{65}Zn excretion as an indirect measurement of Q_{10} in the isopod 27
Atkinson, W. 145
Atrazine levels necessary to adversely affect aquatic plants in Chesapeake Bay 105
Audio tutorial modules for an introductory biology course, preparing. 108
Azalea culture in northeast Alabama 107
Ball, Mary U. 116
Baltz, Timothy 106
Barnett, Wayne S. 131
Barrett, Michael R. 106
Baucom, Thomas F. 137
Bauman, James L. 172
Beaton, John M. 166, 167, 170
Becker, Gayle 168

Journal of the Alabama Academy of Science, Vol. 50, No. 4, October, 1979.

INDEX

Absolute value and inequalities 143
Acardius acephalus human fetus, an 62
Addison, Mark K. 170
Adolescent hypertension, a longitudinal examination of factors related to 168
Adrian, John L. 152
Agricultural borrower characteristics, objective credit scoring--an analysis of 149
Agricultural impact of general development programs, an input model for assaying 153
Alabama coals, some chemical variations with rank for certain 129
Alabama red-bellied turtle, *Pseudemys alabamensis*, nesting habits of the 113
Alford, W. L. 140
Algae from northwest Alabama, some interesting 107
Allen, Laura H. 141, 142
Ammonium sulfate and urea on the growth of five species of algae isolated from lowland rice cultures, effects of 106
Amorphous silicon, electrical properties of 142
Amphetamine and caffeine on fluid volume intake in rats exhibiting schedule-induced polydipsia, the effects of . . . 170
Analysis of urban growth: the case of Tuscaloosa, Alabama, 1938-1978, the use of sequential aerial photography in the 139
Andreoli, Kathleen G. 165
Anthropology and the new archaeology 176
Anthropology in West Bengal India, applied 177
Aramburu, Juan C. 143
Architectural zoning, a small city's experience with 138
Armadillidium vulgare (Latreille), ^{65}Zn excretion as an indirect measurement of Q_{10} in the isopod 27
Atkinson, W. 145
Atrazine levels necessary to adversely affect aquatic plants in Chesapeake Bay 105
Audio tutorial modules for an introductory biology course, preparing. 108
Azalea culture in northeast Alabama 107
Ball, Mary U. 116
Baltz, Timothy 106
Barnett, Wayne S. 131
Barrett, Michael R. 106
Baucom, Thomas F. 137
Bauman, James L. 172
Beaton, John M. 166, 167, 170
Becker, Gayle 168

Beet armyworm, larval development and mortality in the 116
Bell factory: early pride of Huntsville 155
Bentley, Hersche P., Jr. 159
Benzene, the reaction of atomic carbon with 125
Benzimidazole and benzotriazole alkylations, phase-transfer catalysis of 125
Bertsch, Wolfgang 125, 127
Betacyanin chemical properties and distribution in the pokeberry (*Phytolacca americana*) 106
Beta spectroscopy for 89-90 strontium, development of 119
Biesiada, K. A. 125
Bivalve mollusks of the Buttahatchie River, Alabama and Mississippi 109
Blocking paradigm, effects of depletion of forebrain norepinephrine on performance in the 161
Box-Jenkins method for parameter estimation, on the 172
Bradley, James T. 111, 112
Bradley, Jeffrey A. 135
"Brookwood coal group," Brookwood, Alabama, petrography and lithology of the 132
Brownian motion in Banach spaces, on delayed averages of 143
Buckner, Ellen B. 169
Burkett, Dale 125
Business climate in Alabama: a comparison with other states, the 148
Butler, Michael 148
Cain, John L. 174
Campbell, O. A. 108
Campbell, P. Samuel 115
Candida utilis: kinetic and chemical studies, the active center of invertase from 126
Carbonate rocks, foundation problems in soils derived from . . . 128
Cardiac muscle mechanics, exclusion of the effects of damaged ends in the study of isolated 171
Carmichael, Emmett B. 160
Caudle, Anita 162
Causey, Ann Sessler 1
Causey, Lynn 138
Cesium dimer, analysis of absorption and bound-free fluorescence in 118
Chan, Victor. 104
Chang, Mou-Hsiung 143
Chao, Shao-Hua 145
Chapman, Roger M. 131
Chase, David W. 176
Chastain, E. D. 153
Chastain, Marian F. 153
Chemistry at old LaGrange, Alabama's first college 121
Chickamauga, the battle of 157
Chloramphenicol resistance from *E. coli* to *Proteus vulgaris*, transfer of 105
Christenberry, D. 47
Clark, Eloise 168

Cobb, H. C. 140
Cochis, Thomas 106, 107
Conary, Jon T. 157
Conditioned taste aversions, the effects of monoamine uptake inhibitors on 165
Connolly, Paul 123
Cosmic rays with microcomputers, counting 146
Cotinus obovatus Raf. (Anacardiacae) in Alabama, some notes on the distribution of 107
Covariance analysis in the study of economic growth patterns in two Alabama SMSAS, a use of 147
Coyote and red wolf in Alabama, status of 220
Cranford, Norman Bayne 131
Creel, R. M. 115
Cubic spline interpolation applied to missile trajectory generation 172
Current, William L. 108, 116
Darling, Charles M. 123
Davis, D. E. 105
Davis, Mark S. 110
Davis, William B. 158
Dawsey, Cyrus B. 137
Dawson, Ralph, Jr. 161, 166
De Vall, Wilbur B. 136
DeVault, William 126
Diachronic development of English kinship terminology, the . . . 177
1,6-Diaminoalditol using TBOMS ethers, synthesis of 122
Dillard, James W. 119
Diplomatic relations between England and the dominions of Charles I and V, 1525-1535 195
Dirofilaria immitis: serological response of beagles throughout the course of infection 116
Distribution systems, a look at alternative product 211
Division of social science, N.E. Ala. St. Jr. Col. 156
Dixon, Mark D. 172
Dixon, S. J. 164
Donahue, Thomas D. 161
Donald, T. C. 171
Dose distributions from an intrauterine applicator 145
Doubly stochastic matrices, geometric properties of 144
Douglas, Sandra 148
Dusi, Julian L. 220
Dwarf salamander, *Manculus quadridigitatus*, testicular cycle and spermathecal anatomy of the 114
Dycus, Donald L. 111
Dynamic gyro model, performance of a 175
Echiniscus virginicus Riggin (Tardigrada) with notes on life history, range, and geographic variation, redescription of 47
Economic impact of the University of North Alabama on Lauderdale and Colbert counties, 1978, an 148
Education in the health science, competency based 168
Eggers, M. 126

Eiland, Ferrin W., II 114
Elam, David L. 123
Electricity, the analysis of the effect of conservations on the demand for 146
Elementary dimensional analysis into middle school science, introducing 154
Eley, Michael H. 115
EMG biofeedback muscle relaxation training and generalization of training effects, effects of anxiety on 164
Employment profiles of Alabama counties 137
Endangered, threatened, and special concern plants of Alabama 1
Environmental parameters as shown by some solitary corals, changes in 130
Eperythrozoon suis infection in swine: a case history 115
Essenwanger, Oskar 138
Ezzell, Jesse 126
Faculty research at a small college or university? 121
Farmers 1976, information needs and sources of Alabama 149
Faust, R. Kyle 105
Fischer 344 rats, absence of altered liver β-galactosidase in aging 171
Fishes of Cypress Creek, Wayne County, Tennessee, Lauderdale County, Alabama, the 118
Fleming, Mary Louise 168
Flinch-jump test in rats, the effects of various hormones on the 170
Flintknapping site in southeastern Alabama, a 176
Flippo, Ronnie G. 98
Flood delta Thanatocoenose, Eutaw formation, Montgomery County, Alabama, description of a 129
Flower and pod abscission of soybeans, *Glycine max* (L.) Merr., the effect of a cytokinin on 110
Fluorescence of mixtures of He, Kr, Xe, NF_3 and UF_6 140
Folsom, Michael W. 110
Ford, Jonathan 106, 126
Fornaro, Robert J. 177
Forney, D. R. 105
Fossil molluscs, detection of fluorescence in 131
Foster, L. M. 144
Foster, Thomas H. 150
Fouts, James A. 127
Francis, K. T. 163
Frazer, John M. 104
Free, W. J. 147, 151
Freeman, John D. 1, 70
French, Thomas W. 220
Fromhold, A. T., Jr. 141
Fundulus grandis collected from a national estuary and brackish water ponds, a comparison of the annual cycle of reproduction in 113
Fungi of Alabama. VIII. 225
Furman, W. L. 143

GA-7 on the growth of a desmid, preliminary investigation of the effects of 104
Gaiser, J. E. 140
Gardemann, Joachim P. 167
Gasohol from newspapers: a survey 122
Gastaldo, Robert A. 132
Gay, Marjorie W. 175
Genetically obese mice, effects of 2-deoxyglucose on food intake in 162
Geographic literacy among university freshmen 136
Geography curriculum changes in Alabama colleges, 1957-1977 . . . 136
Geography's role in Alabama education 135
Germanium detector, efficiency calibration of a 142
Gibson, Peter M. 144
Giles, Jack, Jr. 144
Glass capillary columns, deactivation of 127
Glass capillary columns, new developments in the surface modification of 125
Glomerella leaf spot of apple, effect of temperature on development of 117
Gooch, Charles 118
Grafted polynomial to estimate crop response surfaces for agricultural lime, using the 147
Gray, D. J. 225
Greely, M. S. 113
Greenberg, Stan 159
Griner, Gary M. 173
Hall, Harry H. 147
Hardy, William E., Jr. 149, 152, 211
Harper, James D. 114
Harper, R. C. 140
Harrison, G. L. 149, 150
Harvey, J. T. 119
Haynes, Robert R. 1
Hefner, L. L. 171
Helminth parasites of the gray fox (*Urocyon cinereoargenteus*) in Alabama and Georgia 109
Helms, Billy P. 146
Henderson, H. A. 153
Heparin N-sulfate sulfatase, purification and properties of . . . 157
Herpes simplex virus infections, identification of immune components which augment chemotherapy of 158
Herpetofauna of the Limesink region of southeastern Alabama, a survey of the 116
Hill, W. E. 124
Ho, S. M. 124
Hobbs, Billy B. 119, 120
Hoesterey, Barbara L. 123
Holmes, Ann E. 134
Holmes, Jack D. L. 156
Hopping transport of charged particles through solids and biological membranes, difference equation solutions for . . 141
Hornbeak, H. H. 158

Housing quality for blacks in Alabama, the effects of the 1960's on 138
Huang, D. H. 145
Hubert, Wayne A. 87
Hudson, C. G. 140, 141
Humaideh, Issam H. 166
Humate occurrence in Alabama and Florida 131
Huscher, Harold A. 176
Hutcheson, James B. 62
Huttlinger, Frank D. 139
Hutto, Anita 70
Hydration of football players during early fall practice in Alabama, on the choice of fluid for the 163
Hypertensive patients, compliance behavior in 165
Hyperthermia, heat transfer in 145
Idiopathis scoliosis and the menstrual onset--are they related 164
Instructions to authors 96
Interferograms, computer aided analysis of 142
Iodide metabolism, effects of 2-selenouracils on 160
Iodine in milk, determination of stable 119
Irby, Don 146
Isbell, Raymond E. 121, 122
Ischemia, regional vulnerability of the brain to 162
Jeane, D. G. 136
Johnson, Howard G. 135
Johnson, Louise E. 164
Jolly, Alexander C. 172
Jones, Thomas R. 116
Kaenel, Kim Von 157
Kallsen, Thomas J. 139
Kanipe, Larry G. 119, 120
Katz, William M. 132
Keynote address 98
Kiely, Donald E. 121, 122
Kilgore, Melvin V. 123
Klimasewski, Ted 138
Koch, Arthur R. 107
Koch, C. T. 125
Krishna, N. R. 145
Lacy, A. Wayne 146, 148
Lamb, Trip 110
Landers, Kenneth E. 106, 107
Lane, C. Patrick 170
Lane, Roger S. 171
Latham, A. J. 117
Lauhachinda, Nitaya 27
Lead and 210-polonium in the environment, determination of 210- 119
Legal problems of the low income population in northwest Alabama 135
Leonard, Maceo 151
Ligand ethylene bis(oxyethylene)bid(diphenylphosphine), nickel II complexes of the 124

Lime vendors in north Alabama, profile of 151
Lin, Nora C. T. 145
Lindsay, Raymond H. 160, 161
Linton, Roger C. 157
Lipids associated with soybean seed development, changes in . . . 35
Literary image of the far east in the early nineteenth century, the 155
Livant, P. 126
Lorden, Joan F. 161, 162, 165, 166
MacGregor, Robert, III 112, 113
Malatino, Anthony M. 134
Mancil, Mary E. 146
Manley, Reeser C. 35
Marcoux, Frank W. 162
Mareno, M. J. 142
Marks, Henry S. 156
Marks, Marsha Kass 155
Martin, Neil R. 150
Mason, W. H. 27, 47, 108
Mathematicians and relativity 143
Mathias, Lon J. 125
McCord, Wallace A. 129
Meany, David B. 113
Melius, Paul 123
Melvin, Emily 136
Metallurgical coal resources of Alabama, known 173
Miller, Margaret 104
Millican, C. Leigh 170
Minutes of annual business meeting 178
Mitchell, Vester P., Jr. 87
Mixed function oxidase activity in the rat, mullet, and killifish, a comparative study of induction of 123
Mobile in 1858, some aspects of 154
Mobile's great hurricane of 1819 156
Moeller, M. B. 118
Molybdenum-rich gossans, mineralogy and chemistry of 133
Monahan, Michael 140
Monosodium glutamate in mice, behavioral effects of postnatal injections of 166
Moore, Karen M. 120
Morgan-Jones, G. 225
Morse, Carol A. 155, 195
Murdock, Larry R. 175
Murdock, Marianne 168
Murphree, Quincy 140
Murphy, Vayden L., Jr. 211
Murray, Barbara B. 115
Musgrove Creek gas field, central Fayette County, Alabama 131
Myers, W. D. 163
Myxosoma funduli Kudo (Myxosporida) in *Fundulus kansae*: ultrastructure of the plasmodium wall and sporogenesis . . . 108
N-halosilazanes containing phosphorous fluorides 124
N-methyl acetamide, MINDO/3 calculations on isomers of 123

Nanosecond nuclear lifetimes, experimental determination of . . . 140
Navia, Juan L. 122
Neely, W. C. 123
$^{58}Ni(n,d+n,pn+n,np)^{57}Co$ reaction cross section at 14 MeV 141
Nicolaro, Mary-Lou 112
Nitrogen heterocycles from sugar acid diamides 121
N,N-dimethyltryptamine in human cerebrospinal fluid (CSF) and rat brain using gas chromatography-mass spectrometry, a determination of 167
No-till and archaeological sites 175
Nuclear Overhauser effect, solution conformation of peptides by 145
Nunn, William B. 165
Nursing diagnosis and intervention, poor initiation of lactation: 169
Oaks, John E. 158
Ovarian development of smallmouth bass in Pickwick Reservoir . . 87
Ovarian responses to ovine LH in gulf killifish (*Fundulus grandis*), daily rhythm in the 112
Pastrick, Harold L. 173, 174, 186
Patterson, Tommy H. 139
Pecopteris Brongniart, morphological plasticity in the upper carboniferous form genus 132
Pelleymounter, Mary Ann 161
Personnel dosimetry performance testing study, an overview of the 141
Peterson, Curt M. 110
Peterson, Raymond D. A. 159
Petranka, James W. 70
Petrology of the Farmville gneiss, northwestern Lee County, Alabama 127
Phenacemide in tablets, GLC determination of 123
Pheophytin, studies on the copper complex of 120
Photoelectron spectroscopy as a tool in gas phase conformational analysis, lone pair-lone pair interaction in a bicyclic diamine. 126
Pitcher plant moth (*Exyra*: Noctuidae), overwintering in three species of 109
Plane of polarization: a classroom demonstration of a latent capability, naked eye determination of the 140
Plankton transport downstream through multipurpose flow-through reservoirs, method for determining 111
Policy design, the engineering of 174
Polyphenol oxidase from potatoes, effect of saccharides on . . . 104
Poultry industry in the Tarcog area, the infra-structure needed to support the 151
Powers, R. P. 120
Prasanna, H. R. 171
Precision neutron dosimetry with CF-252 140
Precision stabilization, IBSSU: a novel approach to 172
Premarital sex, social determinants of attitudes toward 157
Propagation through clear air, submillimeter 143
Pupal populations of *Malacosoma disstria* in Alabama, mortality factors influencing 114

Quasilinear hyperbolic systems, linearized approximations of . . 144
Raines, William L. 119
Rana grilio in south Georgia, food habits of the pig frog 110
Rana sylvatica (Amphibia: Anura: Ranidae) in Alabama, preliminary observation on the wood frog 110
Randleman, C. Duane 117
Rat ovarian tumors, inhibitory effects of selenium on induced . . 117
Rebert, Richard Ross 159
Reddington, Mary C. 112
Reeves, D. N. 171
Reid, W. J. 140
Reiff, T. V. 142
Residential attitudes toward a proposed highway route 137
Reynolds, George W. 142
Rheams, Lawrence J. 128
Richmond, Charles W. 122
Rickert, Edward J. 161
Riffle beetles (*Coleoptera*: Elmidae) of Alabama, the 114
Riggsby, Dutchie S. 154
Riggsby, Ernest D. 154
Roberts, K. 126
Rodén, Lennart 157
Rogers, Elton D. 109
Rottman, Joey S. 105
Rural health care project for migrants in the Sand Mountain area of northeast Alabama, a 168
Rural land market in major agricultural areas of Alabama, the . . 152
Rymal, Debbie E. 109
Sakas, Peter S. 116
Sax, Steven R. 139
Schrader, Ed L. 133
Schrimsher, Jeffrey L. 115
Sedimentation affecting the natural life of a lake in the Warrior River basin within Tuscaloosa County, Alabama . . . 134
Semk, Kathy 121
Serotonin localization by fluorescent techniques in tissues of normotensive and hypertensive rats 159
Sex steroid hormones upon cardiac and other tissues in adult castrated or ovariectomized rats, acute effects of 115
Sharpe, Michael R. 159
Shell, William B. 168
Sheridan, Richard C. 121
Shevlin, P. B. 125
Shipman, Jerry R. 147
Short, John W. 1
Shotts, Reynold Q. 129, 173
Shoults, Margaret C. 125
Shrubs in north Alabama, uncommon 106
Similarity measures for time series data 173
Simulation, on the economics of 186
Sirmans, Susan 123
Sisler, Peter 174
Slemmer, Heather J. 153

Sloan, Rebecca 169
Smith, Vernon 147
Snell, Joni M. 117
Solar energy heating in a cloudy climate 138
Spanish exploration and conquest in the upper Gulf of Mexico, 1512-1561, the second phase of 156
Stallings, J. L. 149
Stark, Elizabeth J. 114
Stephenson, Susan R. 138
Stewart, Dorothy Anne 143
Stewart, W. S. 151
Stewart, William 148
Stock, Carl W. 130
Stone Hill massive sulfide copper deposit: Cleburne and Randolph Counties, Alabama, geology and geochemistry of the 128
Stoner, David 135
Street, Donald R. 146
Streptozotocin diabetic rats, alterations of hepatic microsomal drug metabolism in 161
Stromatoporoidea within the porifera, relationships of the . . . 130
Stromatoporoids in a lower Devonian (Keyser formation) bioherm, Mustoe, Highland County, Virginia, distribution of 134
Strong, William R. 135
Substantia-nigral lesions, the effects of various neutral amino acids on d-amphetamine induced circling in rats with 166
Summer flora of Horseshoe Bend National Military Park, Alabama 70
Superfigures replicating with polar symmetry 144
Suspension fertilizers--the response of young Tennessee Valley farmers to labor and capital constraints? 150
Sutherlin, Donald W. 186
T-lymphocytes, quantitation of 159
Take stock!--a misleading word 136
Tatum, W. M. 113
Taylor, J. G. 124
Taylor, John A. 158
Tellinghuisen, Joel 118
Terminally guided missile--soft and hard constraints, on the realization of an optimal control law for a 174
Thomas, James L. 160
Thompson, Anita 127
Thompson, Jerry 157
Thorn, Cecelia Jean 155
Tornado force estimation, a rationale for 142
Trauth, Stanley E. 114
Trimble, W. C. 113
Tudor-Hapsburg relations 1525-1535 155
Turner, Kathleen D. 177
Uranium and 226-radium by gamma-ray spectroscopy 120
Urban forestry plan for Alabama communities, an 139

U.S. domestic vicious circle problems, keys to 153
Vallery, J. F. 146
Vehicle routing and scheduling systems, economic efficiency of 152
Vigee, Gerald S. 120
Vitamin C, multiple functions and properties of 160
Walker, A. A. 171
Ward, James W. 62
Waters, Laura A. 130
Weaver, David C. 136
Weed, Johno B. 149
Weete, John D. 35
Werkheiser, A. H. 142
Wesson, Kenneth R. 154
Wettermark, M. 158
Whetstone, R. D. 106, 107
Whittington, Dave 128
Widowed and retired persons in Alabama, an analysis of electricity demand by 146
Williams, G. Bruce 172
Williams, John 140
Williams, Ronald J. 150
Wilson, Harold J. 115
Woodward, R. O. 153
Worley, S. D. 123, 126
Yokley, Paul, Jr. 109
Yolk proteins in developing oocytes of *Acheta domesticus* 112
Yolk protein synthesis in ovariectomized house crickets 111
York, R. J. 174